UNITED STATES PATENT AND TRADEMARK OFFICE

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09/726,867	11/30/2000	Tadao Yoshida	450100-02887	1954

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _02 March 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1 and 10-19_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1 and 10-19_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 10 and 19 are objected to because of the following informalities: On page 4 of 16, of claim 1, line 4 and 8, recites "...the element and indentifies a negative..." It appears the phrase should be changed to "...the element and identifies a negative..." Claims 10 and 19 show similar errors. Appropriate correction is required.

Response to Arguments

2. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

With respect to the rejection of the last office action mailed 12/01/08, Applicant amends the claims, discusses the rejection and further argues that the prior arts of records do not teach the amended claims limitations (see page labeled 11 of 15+ of Applicant's Remarks/Arguments).

In response, Examiner disagrees. Examiner notes applicant's arguments, however, the primary prior art of records, Ismail teaches all the claim limitations including using functional equations to compute and analyze the attribute information for each of a plurality of user selected contents and modifies the computations that comprises user preference items by computing a new weight for each element of the computation of each element of the attribute of the plurality of user selected contents (col.4, lines 13-34, col.5, line 19-col.6, line 1+, lines 35-67 and col.8, lines 21-52). Ismail further discloses assigning values to attribute items and further discloses preference

intensity (see fig.1, col.3, line 43-col.4, line 12, col.6, lines 52-67 and col.9, line 59-col.10, line 31). Assign values for attribute items, creates an order for a number of attribute items and hence predetermines an order and a number of attribute items. Creating or generating a viewing habits, generates values (i.e., the generated viewing habits (e.g., frequency of watched programs), creates a value which indicates the intensity of desired programs (positive preference) and a value which indicates less desired programs (negative preference)) where a value identifies a positive attribute intensity when the user has demonstrated a positive preference for element and identifies a negative attribute intensity when the user has demonstrated a negative preference for the element and a value identifies a positive preference intensity when the user has demonstrated a positive preference for the element and a value identifies a negative preference intensity when the user has demonstrated a negative preference for the element). Ismail is silent as to the claimed "...attribute information is expressed with an n-dimensional vector A comprising attribute items as elements…said selection information is expressed with n-dimensional vector S comprising user preference items as elements where each element identifies a preference intensity of corresponding element in the n-dimensional vector A, where each element of vector A identifies...." as recited. However, the deficiency in Ismail is disclosed in Sumita (figs.8-12, col.6, line 57-col.7, line 23, line 50-col.8, line 3 and lines 26-40) as discussed in the office action below. The amended claims do not overcome the prior arts of record. The amendment to the claims necessitated the new ground(s) of rejection discussed below. **This office action is made final.**

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 3, 10, 12 and 19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Ismail et al (6,614,987)** in view of **Sumita et al (6,581,207)**.

Regarding claims 1 and 10, **Ismail** discloses a broadcast system and associated

reception apparatus [100, fig. 1; see col. 4, lines 40-44] comprising:

A broadcast station (see digital satellite system and CATV system, column 4,

lines 49-54) for broadcasting digital content (see digital encoding, column 4, lines 40-

47) with attribute information (attribute information 107), indicating an attribute thereof

(i.e., attributive information is related to said digital contents, column 3, lines 43-48); and

a plurality of reception apparatuses [100, fig. 1] (where a broadcast system includes a

distribution system coupled to at least two reception/receiving apparatuses) having

reception means (column 4, lines 40-41) for digital contents (see digital encoding,

column 4, lines 40-47) and said attribute information (attribute information 107, column

3, lines 33-61), broadcast by the broadcast station (see digital satellite system and

CATV system, column 4, lines 49-54),

A recording medium (storage device 106) for the recording received digital

contents and the received attribute information (see storage of program data 105 and

attribute information 107 in storage device 106, fig. 1, and column 4, lines 7-8), output

means (monitor 108) for outputting the received digital contents (column 4, lines 35-38),

and

Selection means (preference agent 110 and recording manager 112, fig. 1) for

allowing a user to select the digital contents via a filtering process (specification of

programs to record by specification of particular attributes of the program by the user,

col. 3, lines 25-30) by comparing selection information indicating user's preferences

(preference database 116, fig. 1) with the attribute information (107) assigned to digital

contents (column 4, lines 13-31); the plurality of reception apparatuses store the digital

contents that match said user preferences even if said user does not reserve said digital

contents (col. 2, lines 1-8).

Ismail discloses receiving digital contents (col. 4, lines 35-38), attribute

information, (107) and selection information (116), and further discloses a means of

selecting content (col.8, lines 22-40) and receiving viewing habits (where a value

identifies a positive attribute intensity when the user has demonstrated a positive

preference for element and identifies a negative attribute intensity when the user has

demonstrated a negative preference for the element and where a value identifies a

positive preference intensity when the user has demonstrated a positive preference for

the element and identifies a negative preference intensity when the user has

demonstrated a negative preference for the element), including using functional

equations to compute and analyze the attribute information for each of a plurality of user

selected contents and modifies the computations that comprises user preference items

by computing a new weight for each element of the computation of each element of the

attribute of the plurality of user selected contents (col.4, lines 13-34, col.5, line 19-col.6, line 1+, lines 35-67 and col.8, lines 21-52). Ismail further discloses assigning values to attribute items and further discloses preference intensity (see fig.1, col.3, line 43-col.4, line 12, col.6, lines 52-67 and col.9, line 59-col.10, line 31). Assign values for attribute items, creates an order for a number of attribute items and hence predetermines an order and a number of attribute items. **Note that the generated viewing habits (e.g., frequency of watched programs), creates a value which indicates the intensity of desired programs (positive preference) and a value which indicates less desired programs (negative preference)**

Ismail is silent as to the claimed "...attribute information is expressed with an n-dimensional **vector A** comprising attribute items as elements…said selection information is expressed with n-dimensional **vector S** comprising user preference items as elements where each element identifies a preference intensity of corresponding element in the n-dimensional vector A, where each element of vector A may identify a positive attribute intensity and may identify a negative attribute intensity...." as recited.

In an analogous art, however, **Sumita** discloses a system in which attribute information expressed as an n-dimensional vector (vector K, col. 7, line 67 - col. 8, line 1; where "n" is unspecified, "n-dimensional vector" is met by any vector) containing attribute items (keywords) as elements each indicative of attribute intensities (frequency of use) for content (where the keywords are selected so as to be descriptive of programming content, col. 6, fines 57-64 and col. 7, lines 15-23); the selection information expressed as an n- dimensional vector (vector Pi, col. 7, fines 65-66)

comprising user's taste items (i.e., user profile information, column 7, fines 54-58) as

elements where each element is a preference intensity of a corresponding element in

the n-dimensional vector (weighted according to frequency of use, col. 7, lines 65-66);

item types and orders for the attribute and the selection information correspond to those

for the attribute vector (vector K) and the selection vector (vector Pi); and reception

apparatus's selection means which performs an inner product operation between

attribute vector attached to a broadcast content, and selection vector (fig. 1, col. 7, fine

63 and col.8, lines 1-3), and determines whether to select that content based on an

inner product result (see fig. 12, and column 7, fines 50-59), which meets the claim

limitations "...where each element of vector may identify a positive attribute intensity and

may identify a negative attribute intensity..." as claimed; for the purpose of computing

the similarity between incoming content attribute information and user's profile

information (figs.8-12, col.6, line 57-col.7, line 23, line 50-col.8, line 3 and lines 26-40).

Accordingly, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify the system of Ismail to include the attribute information,

selection information, item types and orders, performing an inner product, and

determining whether to select content based on said inner product result as taught by

Sumita, for the computing the similarity between incoming content attribute information

and user's profile information in a broadcast recording system.

As to claim 10, the claimed "A reception method, comprising....." is composed of

the same structural element that were discussed with respect to the rejection of claim 1.

As to claim 12, the combined teachings of Ismail and Sumita, disclose where said selection information's vector (Sumita, vector Pi) is found from a vector of attribute information (Sumita, vector K) attached to a plurality of digital contents (Ismail, see digital encoding, column 4, lines 40-47) selected by the user (Sumita, column 4, lines 62-67).

As to claim 19, the claimed "A reception method, comprising....." is composed of the same structural element that were discussed with respect to the rejection of claim 1

5.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ismail and Sumita** as applied to claims 1 and 10 above, further in view of **Dunlop (of record)** and further in view **Aggarwal (of record).**

As to claim 11, the combined teachings of Ismail and Sumita, disclose a broadcast system and corresponding reception apparatus (Ismail, i.e., a system for receiving broadcasts, recording system 100, fig. 1, and column 4, lines 40-44) wherein the selection means of each of said plurality of reception apparatuses selection means find a selection value (Ismail, preference agent 110 and recording manager 112, fig. 1) based on the following equation and selects the digital content based on a size of the selection value (Sumita, column 7, lines 50-58):

P = (A'S) /]A] [S] (see equation (1), Sumita, col.7, line 63).

Ismail, Cragun and Sumita fail to explicitly state the assumptions:

A "S = $\sum$ akSk   (1)

k=l to n

$|A| = sqrt(\sum ak2)$ (2)

k=l to n

$|S| = sqrt(\sim Sk2)$ (3)

k=l to n in which neither A nor S is a zero vector.   (4)

In an analogous art, however, **Dunlop** discloses assumptions (1), (2), and (3) (pp. 139- 140), for the purpose of defining equations representing the scalar (dot) product of two or more vectors and the magnitude (size) of a vector.

Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Ismail and Sumita to include assumptions (1), (2), and (3), shown above, as taught by Dunlop, for the purpose of defining equations representing the scalar product of two or more vectors and the magnitude of a vector for performing calculations in a broadcast recording system.

In addition, in an analogous art, **Aggarwal** discloses assumption (4) (col. 4, lines 47- 52, i.e., that vectors in a vector product operation are non-zero), for the purpose of obtaining a meaningful, non-zero result.

Therefore, it would also have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Ismail, Sumita and Dunlop to include assumption (4), shown above, as taught by Aggarwal, for the purpose of obtaining a meaningful, non-zero result when performing calculations in a broadcast recording system.

6.   Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Ismail** and **Sumita,** as applied to claim 12 above, and further in view of **Hawkins**

(of record).

As to claim 13, the combined teachings of Ismail and Sumita, disclose a

broadcasting system comprising a selection information vector (Sumita, vector Pi,

column 7, lines 65-66) and digital contents (Ismail, see digital encoding, column 4, lines

40- 47) selected by the user (Sumita, column 4, lines 62-67), however, they fail to

specifically disclose wherein said selection vector is found according to the following

equation:

$$S = 1/M \sum A_k$$

$$k=I \text{ to } M$$

where M is assumed to be a number of contents selected by the user and an attribute

vector for the Kth content selected by the user is assumed to be: $A_k=(a_{1k}, a_{2k}, a_{3k}, ...,$

a_{nk}), as recited in the claims.

In an analogous art, however, **Hawkins** discloses a selection information vector

(vector map representing user selected preferences) is found by averaging vectors A for

attribute information (corresponds to the equation recited in the claim, where summing a

set 1 to M of vectors and dividing the vector sum by M will produce a vector

representing an average of the vectors in the set 1 to M)(col. 11, lines 5-15), for the

purpose of enabling the terminal to automatically perform a search for similar items and

recommend them to the user (col. 11, lines 15-18).

Therefore, it would have been obvious to one of ordinary skill in the art to modify

the system of Ismail and Sumita, to include the formula as recited in the claim which,

generates an average of vectors Ak, as taught by Hawkins, for the purpose of enabling

the terminal to automatically perform a search for similar items and recommend them to

the user in a broadcast recording system.

Regarding claim 14, the combined teachings of Ismail and Sumita, disclose a

broadcasting system comprising a selection information vector (Sumita, vector Pi,

column 7, lines 65-66) attached to a plurality of contents reproduced by a user for a

specified time (Sumita, col. 4, lines 62-67) and digital contents (Ismail, see digital

encoding, col. 4, lines 40-47), and the vector Ak = (alk, a2k, a3k, ..., ank).

However they fail to specifically disclose wherein said selection information

vector is found according to the equation:

$$S = 1/ M\sum Ak \quad k=L-M +I$$

where M is assumed to be a number of windows for finding a vector S, L is assumed to

be a start point for selecting the plurality of digital contents for finding the vector S.

The formula recited in the claim generates an average of M vectors Ak taken

from a set of vectors Ak of size L, corresponding to the teaching of Hawkins who

discloses a selection information vector (vector map representing user selected

preferences) is found by averaging vectors A for attribute information over a specified

period of time (an operation which requires taking some number of previous selection

preferences vectors from a set encompassing the entirety of user selection preferences

vectors, and generating an average selection vector based on the selected subset of

user preference selections vectors) (col. 11, lines 5-15), for the purpose of enabling the

terminal to automatically perform a search for similar items and recommend them to the

user (col. 11, lines 15-18).

Thus, it would have been obvious to one of ordinary skill in the art to modify the

system of Ismail and Sumita, to include the formula as recited in the claim which,

generates an average of M vectors Ak taken from a set of vectors Ak of size L, as

taught by Hawkins, for the purpose of enabling the terminal to automatically perform a

search for similar items and recommend them to the user in a broadcast recording

system.

As to claim 15, the combined teachings of Ismail and Sumita, disclose a

broadcasting system comprising a selection information vector (Sumita, vector Pi,

column 7, lines 65-66) attached to a plurality of contents reproduced by the user for a

specified time (Sumita, column 4, lines 62-67) and digital contents (Ismail, see digital

encoding, column 4, lines 40-47), however, they fail to specifically disclose wherein said

selection information vector is found by averaging vectors A for attribute information

over a specified period of time, as recited in the claims.

Hawkins discloses a selection information vector (vector map representing user

selected preferences) is found by averaging vectors A for attribute information over a

specified period of time (col. 11, lines 5-15), for the purpose of enabling the terminal to

automatically perform a search for similar items and recommend them to the user (col.

11, lines 15-18).

Accordingly, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify the system of Ismail and Sumita, to include said

selection information vector is found by averaging vectors A for attribute information

over a specified period of time, as taught by Hawkins, for the purpose of enabling the

terminal to automatically perform a search for similar items and recommend them to the

user.

7.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Ismail and Sumita, as applied to claim 12 above, further in view of Eldering (of record),

and further in view of Inoue (of record).

Regarding claim 16, the combined teachings of Ismail and Sumita, disclose a

broadcasting system comprising a selection information vector (Sumita, vector Pi,

column 7, lines 65-66) and attribute information attached to the plurality of digital

contents (Ismail, see digital encoding, column 4, lines 40-47 and column 3, lines 43-48),

however they fail to specifically disclose wherein said selection information vector is

found by averaging vectors A for attribute information and wherein attribute information

is attached to a plurality of contents reserved by the user, as recited in the claims.

In an analogous art, however, **Eldering** discloses a system wherein said

selection information vector is found by averaging vectors for attribute information

(column 4, lines 42-51), for the purpose of describing demographic information for a

household, rather than a single subscriber (column 4, lines 42-51).

Accordingly, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify the combined system of Ismail and Sumita, to include said

selection information vector is found by averaging vectors for attribute information, as

taught by Eldering, for the purpose of for the purpose of being able to convey

demographic information for an entire household, rather than a single subscriber in a

user profile feedback system.

Ismail, Sumita and Eldering are silent with respect attribute information is attached to a plurality of contents reserved by a user, as recited in the claims. Inoue, however, discloses a system wherein attribute information (service additional information) is attached to a plurality of contents reserved by a user (column 17, lines 37-47), for the purpose of using the information to judge whether or not to reserve the program.

Thus it also would have been obvious to one of ordinary skill in the art at the time of invention to modify the combined system of Ismail, Sumita, and Eldering to include attribute information attached to a plurality of contents reserved by the user, as taught by Inoue, for the purpose of using the attribute information to judge whether or not to reserve the program based on user preferences in a content receiving system.

8.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ismail and Sumita** as applied to claim 12 above, further in view of **Russel- Falla (of record)** and still further in view of **Inoue**.

Regarding claim 17, the combined teachings of Ismail and Sumita, disclose a broadcasting system comprising a selection information vector (Sumita, vector Pi, column 7, lines 65-66) attached to the plurality of contents reproduced by the user for a specified time (Sumita, column 4, lines 62-67) and digital contents (Ismail, see digital encoding, column 4, lines 40-47), however they fail to specifically disclose averaging vectors for attribute information for contents reserved by a user, assigning a weight to each average, and combining these weights.

In an analogous art, however, Russell-Falla discloses a system wherein a selection vector is found according to:

rating = (n $\sum$ Xp Wp) / c

$\qquad$ l to p

where c is the number of contents selected by a user; and Xp wp is an attribute vector, n is a weight assigned to the average (scale factor, col. 5, lines 28-29), and combining these weights (summing the weighted or scaled averages), for the purpose of rating content relative to a selected characteristic in a broadcast recording system.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ismail and Sumita, to solve for the selection vector according to the disclosure of Russell-Falla, for the purpose of rating content relative to a selected characteristic in a broadcast recording system.

The combined teachings of Ismail, Sumita, and Russel-Falla fail to teach attaching attribute information to the contents reserved by the user. But Inoue discloses a system wherein attribute information (service additional information) is attached to a plurality of contents reserved by a user (column 17, lines 37-47), for the purpose of using the information to judge whether or not to reserve the program.

Therefore it would also have been obvious to one of ordinary skill in the art at the time of invention to modify the combined system of Ismail, Sumita, and Russell-Falla to include attribute information attached to a plurality of contents reserved by the user, as taught by Inoue, for the purpose of using the attribute information to judge

whether or not to reserve the program based on user preferences in a content receiving system.

9.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ismail and Sumita,** as applied to claims 1 and 10 above, and further in view of **Eldering.**

Regarding claim 18, the combined teachings of Ismail, Sumita, disclose a broadcasting system wherein the selection means of each of said plurality of reception apparatuses (Ismail, column 4, lines 40-41) selects the digital content (Ismail, see digital encoding, column 4, lines 40-47) based on a vector of the selection information (Sumita, user prof'tle information, column 7, lines 54-58 and vector Pi, column 7, lines 65- 66). But they fail to specifically disclose said selection information corresponding to a plurality of users, as recited in the claims.

Eldering discloses selection information corresponding to a plurality of users (column 4, lines 42-51), for the purpose of indicating which content a household will be interested in (column 2, lines 23-32).

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the combined system of Ismail and Sumita to include said selection information corresponding to a plurality of users, as taught by Eldering, for the purpose of indicating the type of content a household as a whole will be interested in, in a user profile feedback system.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q. Shang** whose telephone number is **571-272-7355**. The examiner can normally be reached on **700am-400pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Christopher S. Kelley** can be reached on **571-272-7331**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300.**

Information regarding the status of an application may be obtained from the

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system, **call 800-786-9199 (IN USA OR CANADA) or 571-272-1000**.

/Annan Q Shang/

Primary Examiner, Art Unit 2424

Annan Q. Shang